(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 April 2004 (22.04.2004)

PCT

(10) International Publication Number
WO 2004/033856 A1

(51) International Patent Classification[7]: F01C 1/20, 5/02, 19/04, F02B 53/00, 55/02, 55/16

(21) International Application Number: PCT/AU2003/001344

(22) International Filing Date: 10 October 2003 (10.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2002952005 11 October 2002 (11.10.2002) AU

(71) Applicant and
(72) Inventor: HUDSON, Barry [AU/AU]; 60 Chatsworth Quadrant, Lower Templestowe, Victoria 3107 (AU).

(74) Agents: ALLEN, Leon, K. et al.; Davies Collison Cave, 1 Little Collins Street, Melbourne, Victoria 3000 (AU).

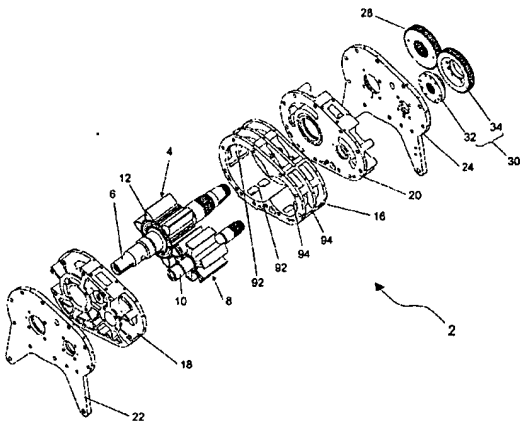
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A ROTARY ENGINE



(57) Abstract: A rotary engine (2) comprises a housing (16) having a male rotor (4) having a plurality of projecting lobes (12) and a female rotor (8) having a plurality of cavities (14). The male (4) and female rotors (8) are mounted for synchronous rotation about parallel axes such that during rotation successive lobes (12) on the male rotor (4) mate with successive cavities (14) on the female rotor (8) to define therewith a combustion chamber (26) in which a mixture of air and fuel is compressed by the interaction of the lobe (12) and the cavity (14) during rotor rotation. At least one exhaust port (78, 80) leads out of the housing (16) for discharge of exhaust gases from the cavity (14) of the female rotor (8) following combustion and from the space (74) between adjacent lobes (12) of the male rotor (4) following combustion. Respective purge ports (44, 46) lead out of the housing (16) downstream of the exhaust port (78, 80) in the direction of rotor rotation to facilitate discharge of residual exhaust gases from the cavity (14) and inter-lobe space (74), the purge ports (44, 46) being associated with air inlet ports (48, 50) to admit air into the cavity (14) and inter-lobe space (74) in preparation for the subsequent combustion cycle.

WO 2004/033856 A1